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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/047,280	01/14/2002	Yung Yip	10305US01	4504

7590 09/30/2003

Attention: Eric D. Levinson
Imation Corp.
Legal Affairs
P.O. Box 64898
St. Paul, MN 55164-0898

EXAMINER

NGUYEN, TANH Q

ART UNIT	PAPER NUMBER
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2182

DATE MAILED: 09/30/2003

6

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/047,280

Applicant(s)

YIP ET AL.

Examiner

Tanh Q. Nguyen

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-- **Th MAILING DATE of this communication appears on the cover sheet with the correspond nce address --**

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 January 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2, 4, 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claims 17, 35 are objected to because of the following informalities: it is not clear what applicant intends to claim with "and one or mounting holes" in line 2 of the respective claims. Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 3-4, 7-9, 22-23, 28-29, 31 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 3 recites the limitation "the electrical interface of the data cartridge" in line 3.

Claim 4 recites the limitation "the emulation tape drive" in line 3.

Claim 7 recites the limitation "the data cartridge interface" in line 2.

Claim 22 recites the limitation "the controller" in line 2.

Claim 28 recites the limitation "the electrical interface of the data cartridge" in line 3.

Claim 29 recites the limitation "the emulation tape drive" in line 3.

Claim 31 recites the limitation "the data cartridge interface" in lines 2-3.

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There is insufficient antecedent basis for the above limitations in the claims.

Claims 8-9 are rejected because they depend on claim 7. Claim 23 is rejected because it depends on claim 22.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 1-2, 5-13, 16-19; 26-27, 30-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Plotkin et al. (USP 5,297,124)**.

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7. As per claim 1, **Plotkin et al.** (Plotkin) teaches a system [10, FIG. 1] comprising:

a data cartridge [18, FIG. 1] carrying a non-tape storage medium [Disk, FIG. 1], wherein the data cartridge includes read/write circuitry [Disk Drive, FIG. 1] to access the non-tape storage medium and an external electrical connector coupled to the read/write circuitry [connector between 16 and 18, FIG. 1]; and
a tape drive emulator [16, FIG. 1] connected to the data cartridge by a connector [connector between 16 and 18, FIG. 1].

Plotkin, therefore, teaches the invention except for the tape drive emulator having an electrical socket to receive the electrical connector of the data cartridge.

It would, however, have been obvious to one of ordinary skill in the art at the time the invention was made to use an electrical socket in the tape drive emulator to receive the electrical connector of the data cartridge since it is well known in the art at the time the invention was made to use an electrical socket of one device to receive the electrical connector from another device.

8. As per claim 2, since an electrical socket inherently has a set of connectors that engage the electrical connections of the device being received, Plotkin teaches a socket having a set of connectors that engage the electrical connections of the data cartridge, hence the socket comprising a zero insertion force.

9. As per claims 5-9, Plotkin teaches the tape drive emulator comprising a host interface [14, FIG. 1] to electrically couple the tape drive emulator to a host computing device [12, FIG. 1];

the tape drive emulator comprising a SCSI controller [26, FIG. 1] using a block oriented protocol for expressing the variable sized "tape" data as fixed blocks of data (col. 3, lines 22-25), hence the host interface conforming to SCSI;

the tape drive emulator comprising a translation unit to translate commands between the host interface and the data cartridge interface (Abstract, lines 3-4; col. 3, lines 22-29);

the translation unit receiving data stream commands from the host interface and translating the data stream commands into data block commands (Abstract, lines 3-4; col. 3, lines 22-25);

the tape drive emulator comprising a data buffer [24, FIG. 1] for buffering the data stream commands (col. 3, lines 18-19).

10. As per claims 10-12, Plotkin teaches the non-tape storage medium comprising a disk-shaped storage medium [Disk, FIG. 1];

the data cartridge includes a self-contained disk drive housing the disk-shaped storage medium and a disk driver controller [Disk Drive, FIG. 1];

the data cartridge further comprising a disk drive controller to control access to the non-tape storage medium [Disk Drive, FIG. 1], wherein the controller communicates with the tape drive emulator according to Small Computer System Interface (SCSI) [26, FIG. 1].

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11. As per claim 13, since it was well known in the art at the time the invention was made to provide power to a downstream device through the connector with an upstream device when there is sufficient power to reduce clutter and cost, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the socket of the tape drive emulator to provide power to the controller of the data cartridge via the electrical connector of the data cartridge to reduce clutter and cost.

12. As per claims 16-17, Plotkin teaches a plug-compatible emulator system to emulate tape to instead use a disk drive while avoiding hardware modifications to a computer system previously having only a tape drive (col. 2, lines 20-27; col. 1, lines 30-35), hence the tape drive emulator having a form factor of an industry standard tape drive such that the location of the socket conforms to the location of a slot within the industry standard tape drive; and the tape drive emulator comprising a power connector and one or more mounting holes, and further wherein the dimensions of the tape drive emulator, the location of the power connector, and the location of the mounting holes conform to the industry standard tape drive (see also claim 13 above).

13. As per claim 18, Plotkin teaches a plug-compatible emulator system to emulate a tape (see rejections of claims 16-17 above), hence the tape drive emulator identifying itself as an industry standard tape drive in response to a query from a host computing device.

14. As per claim 19, Plotkin teaches the tape drive emulator determines the capacity of the non-tape storage medium within the data cartridge and communicates the capacity to a host computing device (col. 3, lines 40-42; col. 3, lines 48-52).

15. As per claims 26-27, 30-37, see the rejections to claims 1-2, 5, 7, 11, 12, 17-19

16. Claims 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Albrecht et al. (Pub No. 2002/0159182 A1)** in view of **Plotkin et al.**.

Albrecht et al. (Albrecht) teaches a data cartridge [40, FIG. 3] carrying a non-tape storage medium [0055], wherein the data cartridge includes read/write circuitry [0055] to access the non-tape storage medium and an external electrical connector coupled to the read/write circuitry [48, FIG. 3] being used with an automation unit to selectively retrieve the data cartridge from a plurality of data cartridges [0002], conforming to industry standard dimensions for magnetic tape data cartridges (Abstract, lines 1-5).

Albrecht, therefore, teaches the claimed invention except for a tape drive emulator having an electrical socket to receive the electrical connector of the data cartridge.

Plotkin teaches a tape drive emulator having an electrical socket to receive the electrical connector of the data cartridge (see rejection to claim 1

above) to allow a disk drive to be driven by a host using tape drive commands (col. 2, lines 20-26).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use Albrecht's data cartridge in conjunction with Plotkin's tape drive emulator to allow Albrecht's disk drive to be driven by a host using tape drive commands.

17. Claims 20-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Albrecht et al.**.

Albrecht teaches a data cartridge [40, FIG. 3] comprising:

a housing [41, FIG. 3] conforming to industry standard dimensions for a magnetic tape data cartridge (Abstract, lines 1-5);

a non-tape storage medium and read/write circuitry for accessing the non-tape storage medium, wherein the non-tape storage medium and the read/write circuitry are contained within the housing [0055];

an externally available electrical connector coupled to the read/write circuitry [0055];

a controller to control access to the non-tape storage medium [0055];

the non-tape storage medium comprising a disk-shaped storage medium and the controller comprises a disk drive controller [0055];

the data cartridge including a self-contained disk drive housing the disk-shaped storage medium and the disk driver controller [0055];

the non-tape storage medium comprising one of a solid-state storage medium, an optical storage medium, and a magneto-optical storage medium [0012].

Albrecht, therefore, teaches the claimed invention except for the externally available electrical connector being adapted to engage a zero insertion force (ZIF) socket, and except for receiving power via the electrical connector.

It would, however, have been obvious to one of ordinary skill in the art at the time the invention was made to use an electrical socket that can easily receive the electrical connector of the data cartridge since it is well known in the art at the time the invention was made to use an electrical socket of one device to receive the electrical connector from another device, and that it is desirable for the socket to easily receive the electrical connector, hence the externally available electrical connector being adapted to engage a zero insertion force (ZIF) socket.

It would have been also obvious to one of ordinary skill in the art at the time the invention was made for the controller to receive power via the electrical connector of the data cartridge to reduce clutter and cost since it was well known in the art at the time the invention was made to provide power to a downstream device through the connector with an upstream device when there is sufficient power to reduce clutter and cost.

Conclusion

18. Any inquiry concerning this communication or earlier communications from

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the examiner should be directed to Tanh Quang Nguyen whose telephone number is (703) 305-0138, and whose e-mail address is tanh.nguyen36@uspto.gov. The examiner can normally be reached on Monday-Friday from 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey Gaffin, can be reached on (703) 308-3301. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306 for After Final, Official, and Customer Services, or (703) 746-5672 for Draft to the Examiner (please label "PROPOSED" or "DRAFT").

Any inquiry of a general nature relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-3900.

Mail responses to this action should be sent to:

Commissioner of Patents and Trademarks
Washington, D. C. 20231

Faxes for formal communications intended for entry should be sent to:

(703) 308-9051,

Hand-delivered responses should be brought to:

Crystal Park II, 2121 Crystal Drive, Arlington, Va, Fourth Floor
(Receptionist).

TQN

September 22, 2003


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